

REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is requested. Claims 9, 13-18, 20, and 22-30 are in this application. Claim 14 was amended to correct an inadvertent error. Claims 1-8, 10-12, 19, and 21 have been cancelled. Claims 22-30 have been added to alternately claim the present invention.

The Examiner rejected claims 9 and 13-20 under 35 U.S.C. §102(e) as being anticipated by Ker et al. (U.S. Patent No. 6,011,681). To aid in the discussion, applicant has inserted an annotated version of a part of FIG. 11 of Ker.

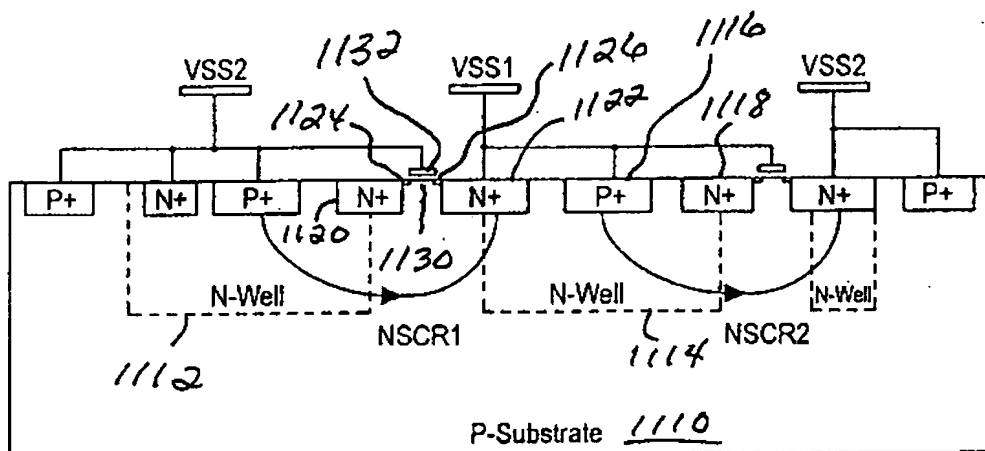


FIG. 11

As shown in annotated FIG. 11, the device includes a p-substrate 1110, and spaced-apart n-wells 1112 and 1114 that are formed in p-substrate 1110. The device also includes a p+ region 1116 and an n+ region 1118 that are both formed in n-well 1114. Further, the device includes an n+ region 1120 that is formed in both p-substrate 1110 and n-well 1112, and an n+ region 1122 that is formed in both p-substrate 1110 and n-well 1114. In addition, the device appears to have

AMENDMENT IN RESPONSE TO OFFICE
ACTION DATED FEBRUARY 23, 2005 AND
ADVISORY ACTION DATED APRIL 27, 2005

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NLDD regions 1124 and 1126 formed in p-substrate 1110 that contact the n+ regions 1120 and 1122. The device also has a gap region 1130 of p-substrate 1110, and a gate 1132.

Claim 16 recites, in part:

“a first well of a second conductivity type formed in the semiconductor material, the first well having a dopant concentration;

“a second well of the second conductivity type formed in the semiconductor material, the second well having a dopant concentration and being spaced apart from the first well;

“a third contact region of the first conductivity type formed in the second well;

“a fourth contact region of the second conductivity type formed in the second well, the fourth contact region being electrically connected to the third contact region to have a same potential.”

In rejecting the claims, the Examiner pointed to n-well 1112 shown in the annotated version of FIG. 11 of Ker as constituting the first well of claim 16, and n-well 1114 as constituting the second well of claim 16. Further, the Examiner pointed to p+ region 1116 shown in the annotated version of FIG. 11 of Ker as constituting the third contact region of claim 16, and n+ region 1118 as constituting the fourth contact region of claim 16.

N+ region 1118, however, can not be read to be the fourth contact region required by claim 16 because the fourth contact region must be electrically connected to the third contact region to have the same potential. As shown in the annotated version of FIG. 11 of Ker, p+ region 1116 and n+ region 1118 are not electrically connected to have the same potential.

Thus, since the Ker reference does not teach the required third and fourth contact regions, claim 16 is not anticipated by the Ker reference. Further, since claims 9, 13-15, 17-18, 20, and 22 depend either directly or indirectly from claim 16,

claims 9, 13-15, 17-18, 20, and 22 are not anticipated by the Ker reference for the same reasons as claim 16.

In addition, claim 16 further recites:

“a first trigger region of the second conductivity type formed in the first well, the first trigger region being spaced apart from the first and second contact regions;

“a second trigger region of the second conductivity type formed in the second well, the second trigger region being spaced apart from the third and fourth contact regions;

“a separation region of the semiconductor material located only between the first and second trigger regions, the separation region contacting the surface, the first trigger region, and the second trigger region; and

“a device region that overlies and contacts the surface at a location where the separation region contacts the surface between the first and second trigger regions, the device region at the location being free of a gate, and not lying below a gate.”

New claim 22 recites:

“wherein the separation region has only the first conductivity type.”

In further rejecting the claims, the Examiner pointed to n+ region 1120 as constituting the first trigger region of claim 16, and n+ region 1122 as constituting the second trigger region of claim 16. In addition, the Examiner pointed to the NLDD regions 1124 and 1126 as well as gap region 1130 of p-substrate 1110 as constituting the separation region required by claim 16.

In the response after final filed on April 13, 2005, applicant argued that the NLDD regions 1124 and 1126 have the wrong conductivity type and can not be read to be part of the separation region. In the Advisory Action mailed on April 27, 2005, the Examiner argued that claim 16 does not require that the entire separation region be formed of the first conductivity type.

New claim 22, however, expressly recites that the separation region has only the first conductivity type. Thus, since only the gap region 1130 of p-substrate 1110 can be read to be the separation region, the device shown in FIG. 11 of Ker fails to teach or suggest a device region as required by claim 22 because gate 1132 lies over the location where separation region (the gap region 1130 of p-substrate 1110) contacts the surface. As a result, new claim 22 is not anticipated by Ker for this additional reason.

New claim 23 recites, in part:

“a first well of a first conductivity type, the first well having a top surface;

“a second well of the first conductivity type, the second well having a top surface;

“a third connection region of the first conductivity type that contacts the second well;

“a fourth connection region of the second conductivity type that contacts the second well, the fourth connection region being electrically connected to the third connection region to have a same potential.”

However, as noted above, the Ker reference does not teach that p+ region 1116 and n+ region 1118 are electrically connected to have the same potential. Thus, since the Ker reference does not teach the required third and fourth connection regions, claim 23 is not anticipated by the Ker reference. In addition, since claims 24-30 depend either directly or indirectly from claim 23, claims 24-30 are not anticipated by the Ker reference for the same reasons as claim 23.

Thus, for the foregoing reasons, it is submitted that all of the claims are in a condition for allowance. Therefore, the Examiner's early re-examination and reconsideration are respectively requested.

Respectfully submitted,

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